

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Ralph Duncan *et al.*

Appl. No. (to be assigned)

Filed: Herewith

For: **An Integrated VCO Having an  
Improved Tuning Range over  
Process and Temperature  
Variations** (as amended)

Confirmation No. (to be assigned)

Art Unit: (to be assigned)

Examiner: (to be assigned)

Atty. Docket: 1875.138000F

**Information Disclosure Statement**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not

be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
  - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was

first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ c. Attached is our PTO-2038 Credit Card Payment Form **[OR]** Check No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Attached is our PTO-2038 Credit Card Payment Form **[OR]** Check No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
  - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
  - ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more

than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below:
- ☒ 7. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. 10/171,762, filed June 17, 2002, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



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SKGF Rev. 12/1802 mac; Rev. 08/07/03 svb

FORM PTO-1449  
INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.  
 1875.138000F

APPLICATION NO.  
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APPLICANTS  
 Ralph Duncan *et al.*

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 Herewith

GROUP  
 (to be assigned)

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	4,211,975	07/1980	Kuroda			
	AB1	4,789,976	12/1988	Fujishima			
	AC1	4,818,903	04/1989	Kawano			
	AD1	4,903,329	02/1990	Marik <i>et al.</i>			
	AE1	5,031,233	07/1991	Ragan			
	AF1	5,200,826	04/1993	Seong			
	AG1	5,311,318	05/1994	Dobrovoly			
	AH1	5,329,143	07/1994	Chan <i>et al.</i>			
	AI1	5,389,898	02/1995	Taketoshi <i>et al.</i>			
	AJ1	5,423,076	06/1995	Westergren <i>et al.</i>			
	AK1	5,428,829	06/1995	Osburn <i>et al.</i>			

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL1	37 23 778 A1	01/1988	DE	H03L	7/10	X Yes No
	AM1	195 06 324 C1	10/1995	DE	H03H	21/00	X Yes No
	AN1	0 393 717 A2 & A3	10/1990	EP	H03H	11/12	Yes No
	AO1	0 431 887 A2 & A3	06/1991	EP	H03L	1/02	Yes No
	AP1	0 535 536 A1	04/1993	EP	H01L	27/02	Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

AR	1	Burghartz, J. N. <i>et al.</i> , "High-Q Inductors in Standard Silicon Interconnect Technology and its Application to an Integrated RF Power Amplifier," <i>International Electron Devices Meeting Technical Digest</i> , IEEE, pp. 1015-1017 (December 10-13, 1995).
AS	1	Craninckx, J. and Steyaert, M.S., "A 1.8-GHz Low-Phase-Noise CMOS VCO Using Optimized Hollow Spiral Inductors," <i>IEEE Journal of Solid-State Circuits</i> , Vol. 32, No. 5, IEEE, pp. 736-744 (May, 1997).
AT	1	Long, J.R. and Copeland, M.A., "The Modeling, Characterization, and Design of Monolithic Inductors for Silicon RF IC's," <i>IEEE Journal of Solid-State Circuits</i> , Vol. 32, No. 5, IEEE, pp. 357-369 (March, 1997).

EXAMINER

DATE CONSIDERED

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2	5,446,311	08/1995	Ewen <i>et al.</i>			
	AB2	5,483,207	01/1996	Gabara			
	AC2	5,625,325	04/1997	Rotzoll <i>et al.</i>			
	AD2	5,630,214	05/1997	Yamamoto <i>et al.</i>			
	AE2	5,648,744	07/1997	Prakash <i>et al.</i>			
	AF2	5,686,864	11/1997	Martin <i>et al.</i>			
	AG2	5,715,012	02/1998	Patel <i>et al.</i>			
	AH2	5,717,243	02/1998	Lowther			
	AI2	5,737,035	04/1998	Rotzoll			
	AJ2	5,739,587	04/1998	Sato			
	AK2	5,825,600	10/1998	Watt			

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL2	0 629 040 A1	12/1994	EP	H03D	1/22	Yes No
	AM2	0 780 853 A1	06/1997	EP	H01F	17/00	Yes No
	AN2	2 058 505 A	04/1981	GB	H03D	7/12	Yes No
	AO2	62-154607	07/1987	JP	H01F	15/04	X Yes No
	AP2	WO 97/09786 A1	03/1997	PCT	H03L	7/08	Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AR	2	Poole, S.J. <i>et al.</i> , "A CMOS Subscriber Line Audio Processing Circuit Including Adaptive Balance," <i>IEEE International Symposium on Circuits and Systems Proceedings</i> , Vol. 2 of 3, IEEE, pp. 1931-1934 (1988).
	AS	2	Yue, C.P. and Wong, S.S., "On-Chip Spiral Inductors with Patterned Ground Shields for Si-Based RF IC's," <i>IEEE Journal of Solid-State Circuits</i> , Vol. 33, No. 5, IEEE, pp. 743-752 (May, 1998).
	AT	2	English-language Abstract of Japanese Patent Publication No. 62-154607, 2 pages (July 9, 1987) - Date of Publication of Application).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA3	5,828,589	10/1998	Degenhardt			
	AB3	6,150,891	11/2000	Welland <i>et al.</i>			
	AC3	6,177,964 B1	01/2001	Birleson <i>et al.</i>			
	AD3	6,426,680 B1	07/2002	Duncan <i>et al.</i>			
	AE3						
	AF3						
	AG3						
	AH3						
	AI3						
	AJ3						
	AK3						

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL3	WO 98/50956 A1	11/1998	PCT	H01L	29/00	Yes No
	AM3						Yes No
	AN3						Yes No
	AO3						Yes No
	AP3						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>3</u>	
	AS	<u>3</u>	
	AT	<u>3</u>	

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